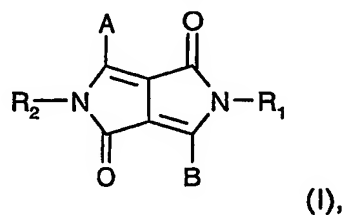
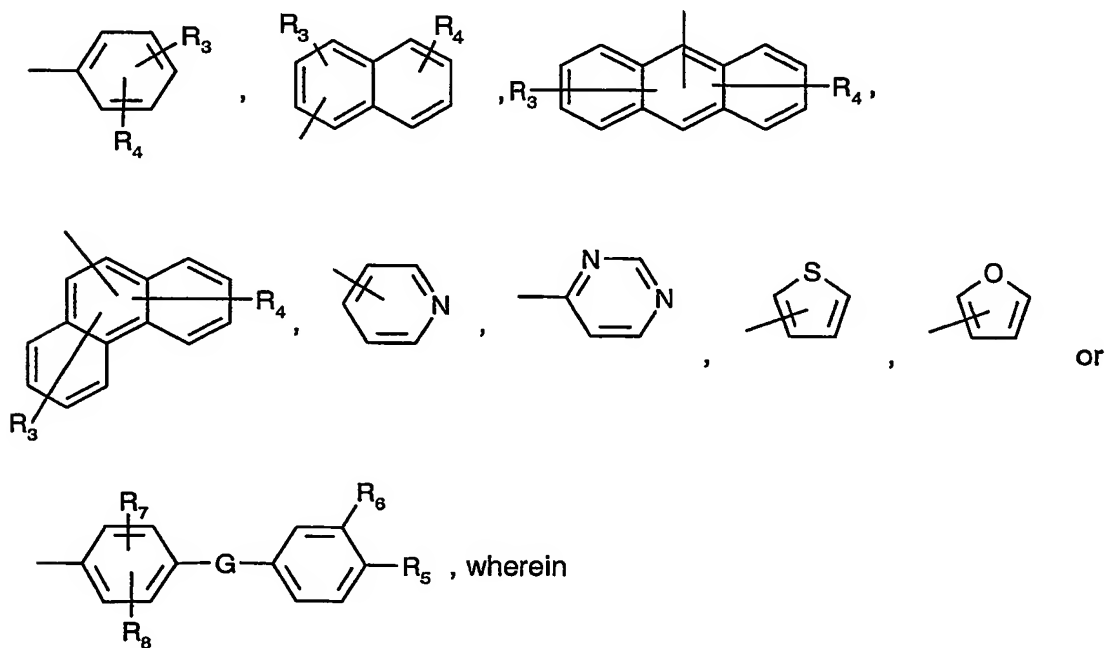


Claims

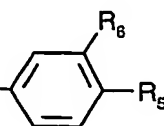
1. A colour filter comprising a transparent substrate and a layer comprising from 1 to 75% by weight, preferably from 5 to 50% by weight, with particular preference from 25 to 40% by weight, based on the overall weight of the layer, of a diketopyrrolopyrrole of the general formula (I) dispersed in a high molecular mass organic material:



wherein A and B independently of one another are a group of the formula



R_3 and R_4 independently of one another are hydrogen, halogen, C_1 - C_{18} alkyl, C_1 - C_{18} alkoxy, $-NR_{16}R_{17}$, $-CONHR_{18}$, $-COOR_{19}$, $-SO_2NH-R_{20}$, C_1 - C_{18} alkoxycarbonyl, C_1 - C_{18} alkylaminocarbonyl, $-CN$, $-NO_2$, trifluoromethyl, C_5 - C_7 cycloalkyl,

$-C=N-(C_1-C_{18}alkyl)$, $-C=N-$ , imidazolyl, pyrazolyl, triazolyl,

piperazinyl, pyrrolyl, oxazolyl, benzoxazolyl, benzothiazolyl, benzimidazolyl, morpholinyl, piperidinyl or pyrrolidinyl,

G is $-\text{CH}_2-$, $-\text{CH}(\text{CH}_3)-$, $-\text{C}(\text{CH}_3)_2-$, $-\text{CH}=\text{N}-$, $-\text{N}=\text{N}-$, $-\text{O}-$, $-\text{S}-$, $-\text{SO}-$, $-\text{SO}_2-$, $-\text{CONH}-$ or $-\text{NR}_9-$,

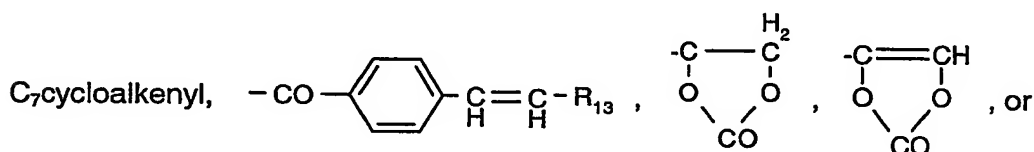
R_5 and R_6 independently of one another are hydrogen, halogen, C_1 - C_6 alkyl, C_1 - C_{18} alkoxy or $-\text{CN}$,

R_7 and R_8 independently of one another are hydrogen, halogen or C_1 - C_6 alkyl and R_9 is hydrogen or C_1 - C_6 alkyl,

R_1 and R_2 are independently of each other C_1 - C_{18} alkyl, C_1 - C_{18} alkyl, which is interrupted one or more times by O or S, C_6 - C_{12} aryl, C_7 - C_{12} aralkyl, or a group of the formula $-\text{C}(\text{O})\text{OR}_{10}$, wherein R_{10} is C_1 - C_{18} alkyl, C_5 - C_{10} cycloalkyl, C_6 - C_{12} aryl, or C_7 - C_{12} aralkyl, or a group of the formula

$-\text{X}_2-\text{X}_3$ (II), wherein

X_2 is an alkylene, arylene, aralkylene or cycloalkylene spacer containing optionally one or more groups $-\text{O}-$, $-\text{S}-$, $-\text{NR}_{14}-$, $-\text{CO}-$, $-\text{CONH}-$, $-\text{CONR}_{15}-$, or $-\text{COO}-$ as linking bridge, X_3 is OH, NH_2 , $-\text{C}(\text{R}_{11})=\text{CH}_2$, $-\text{OC}(\text{O})-\text{C}(\text{R}_{12})=\text{CH}_2$, $-\text{C}(\text{O})-\text{C}(\text{R}_{12})=\text{CH}_2$, C_5-



$-\text{OC}(\text{O})-\text{N}-\text{X}_4-\text{N}-\text{C}(\text{O})-\text{O}-\text{X}_5-\text{O}-\text{C}(\text{O})-\text{C}(\text{R}_{12})=\text{CH}_2$; wherein

R_{11} is hydrogen, or C_1 - C_4 alkyl, or halogen,

R_{12} is hydrogen, C_1 - C_4 alkyl, or halogen,

R_{13} is hydrogen, C_1 - C_4 alkyl, or C_6 - C_{12} aryl,

R_{14} and R_{15} are independently of each other hydrogen, C_1 - C_6 alkyl, or C_6 - C_{12} aryl,

R_{16} , R_{17} , R_{18} and R_{20} are independently of each other hydrogen, C_1 - C_{18} alkyl, C_6 - C_{12} aryl, or C_7 - C_{12} aralkyl,

R_{19} is C_1 - C_{18} alkyl, C_6 - C_{12} aryl, or C_7 - C_{12} aralkyl, and

X_4 and X_5 are independently of each other an alkylene, arylene, aralkylene or cycloalkylene spacer,

R_3 , R_4 , R_5 , R_6 , R_7 , and R_8 can also be a group of formula

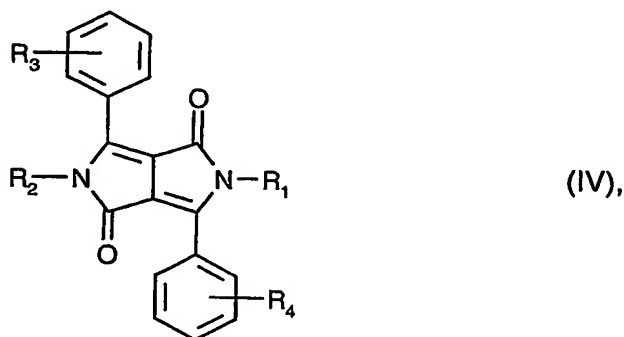
$-\text{X}_1-\text{X}_2-\text{X}_3$ (III), wherein

X_1 is $-\text{O}-$, $-\text{S}-$, $-\text{NH}-$, $-\text{CONH}-$, $-\text{COO}-$, $-\text{SO}_2-\text{NH}-$, or $-\text{SO}_2-\text{O}-$, and

X_2 and X_3 are as defined above,

with the proviso that at least one, preferably two, of the groups of the formula (II) and/or (III) is present per molecule.

2. A colour filter according to claim 1, wherein the pigment has the general formula



wherein R_1 and R_2 are independently of each other a group of the formula

$-X_2-X_3$ (II), wherein

X_2 is an alkylene, arylene, aralkylene or cycloalkylene spacer containing optionally a group $-O-$, $-S-$, $-NR_{14}-$, $-CO-$, $-CONH-$, $-CONR_{15}-$, or $-COO-$ as linking bridge,

X_3 is $-OH$, $-NH_2$, $-C(R_{11})=CH_2$, $-OC(O)-C(R_{12})=CH_2$, $-C(O)-C(R_{12})=CH_2$, or $-OC(O)-N-X_4-N-C(O)-O-X_5-O-C(O)-C(R_{12})=CH_2$; wherein

R_{11} is hydrogen, or methyl,

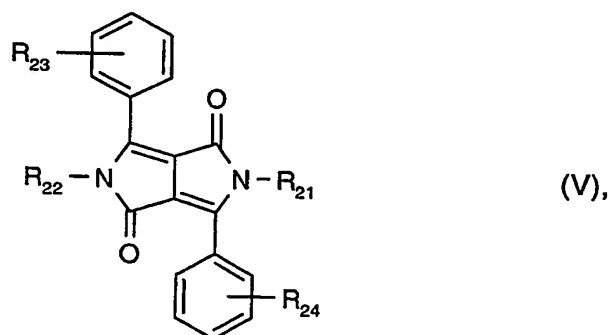
R_{12} is hydrogen, or methyl,

R_{14} and R_{15} are independently of each other hydrogen, C_1 - C_8 alkyl, or C_6 - C_{12} aryl, and X_4 and X_5 are as defined in claim 1,

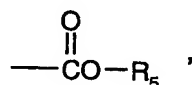
R_3 and R_4 independently of one another are hydrogen, halogen, C_1 - C_{18} alkyl,

C_1 - C_{18} alkoxy, $-NR_{16}R_{17}$, $-CONHR_{18}$, $-COOR_{19}$, $-SO_2NH-R_{20}$, C_1 - C_{18} alkoxycarbonyl, C_1 - C_{18} alkylaminocarbonyl, $-CN$, $-NO_2$, trifluoromethyl, C_5 - C_7 cycloalkyl, wherein R_{16} , R_{17} , R_{18} , R_{19} and R_{20} are as defined in claim 1.

3. A colour filter according to claim 1, wherein the pigment has the general formula



in which R_{21} and R_{22} are independently of one another hydrogen, C_1 - C_{18} alkyl, C_1 - C_{18} alkyl which is interrupted one or more times by O or S, C_7 - C_{12} aralkyl or a group of the formula



in which R_5 is C_1 - C_{18} alkyl,

R_{23} and R_{24} independently of one another are a group of formula

$\text{---X}_1\text{---X}_2\text{---X}_3$, wherein

X_1 is ---O--- , ---S--- , ---NH--- , ---CONH--- , ---COO--- , $\text{---SO}_2\text{---NH---}$, or $\text{---SO}_2\text{---O---}$,

X_2 is an alkylene, arylene, aralkylene or cycloalkylene spacer containing optionally one or more groups ---O--- , ---S--- , $\text{---NR}_{14}\text{---}$, ---CO--- , ---CONH--- , $\text{---CONR}_{15}\text{---}$, or ---COO--- as linking bridge,

X_3 is ---OH , ---NH_2 , $\text{---C(R}_{11}\text{)=CH}_2$, $\text{---OC(O)---C(R}_{12}\text{)=CH}_2$, $\text{---C(O)---C(R}_{12}\text{)=CH}_2$, or $\text{---OC(O)---N---X}_4\text{---N---C(O)---O---X}_5\text{---O---C(O)---C(R}_{12}\text{)=CH}_2$; wherein

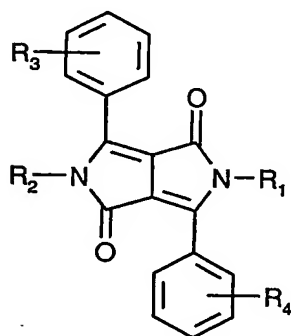
R_{11} is hydrogen, or methyl,

R_{12} is hydrogen, or methyl,

R_{14} and R_{15} are independently of each other hydrogen, C_1 - C_8 alkyl, or C_6 - C_{12} aryl, and

X_4 and X_5 are as defined in claim 1.

4. A diketopyrrolopyrrole of the general formula



(IV),

wherein R_1 and R_2 are independently of each other a group of the formula

$\text{---X}_2\text{---X}_3$ (II), wherein

X_2 is an alkylene, arylene, aralkylene or cycloalkylene spacer containing optionally one or more groups ---O--- , ---S--- , $\text{---NR}_{14}\text{---}$, ---CO--- , ---CONH--- , $\text{---CONR}_{15}\text{---}$, or ---COO--- as linking bridge,

X_3 is OH , NH_2 , $\text{---C(R}_{11}\text{)=CH}_2$, $\text{---OC(O)---C(R}_{12}\text{)=CH}_2$, $\text{---C(O)---C(R}_{12}\text{)=CH}_2$, or $\text{---OC(O)---N---X}_4\text{---N---C(O)---O---X}_5\text{---O---C(O)---C(R}_{12}\text{)=CH}_2$; wherein

R_{11} is hydrogen, or methyl,

R_{12} is hydrogen, or methyl,

R_{14} and R_{15} are independently of each other hydrogen, C_1 - C_8 alkyl, or C_6 - C_{12} aryl, and

X_4 and X_5 are as defined in claim 1,

R_3 and R_4 independently of one another are C_1 - C_{18} alkyl, C_1 - C_{18} alkoxy, $-NR_{16}R_{17}$, $-CONHR_{18}$, $COOR_{19}$, $-SO_2NH-R_{20}$, C_1 - C_{18} alkoxycarbonyl, C_1 - C_{18} alkylaminocarbonyl, wherein R_{16} , R_{17} , R_{18} , R_{19} and R_{20} are C_1 - C_{18} alkyl.

5. A diketopyrrolopyrrole according to claim 4, wherein R_1 and R_2 are independently of each other a radical of the formula

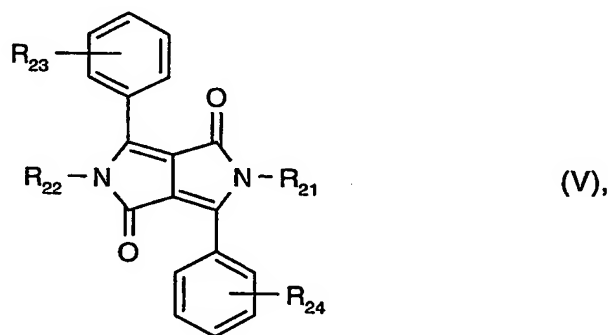
$-X_2-X_3$, wherein

X_2 is C_1 - C_{18} alkylene and

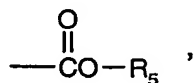
X_3 is $-NH_2$, $-OH$, $-CH=CH_2$, $-C(CH_3)=CH_2$, $-CO-CH=CH_2$, $-CO-C(CH_3)=CH_2$, $-CO-CH=CH_2$ or $-CO-C(CH_3)=CH_2$.

6. A diketopyrrolopyrrole according to claim 4 or 5, wherein R_3 and R_4 are independently of each other C_1 - C_{18} alkylmercapto, C_1 - C_{18} alkoxy, or $-NR_{16}R_{17}$, wherein one of the groups R_{16} and R_{17} is hydrogen and the other is C_1 - C_{18} alkyl or both groups R_{16} and R_{17} are independently of each other C_1 - C_{18} alkyl.

7. A diketopyrrolopyrrole of the general formula



in which R_{21} and R_{22} are independently of one another hydrogen, C_1 - C_{18} alkyl, C_1 - C_{18} alkyl which is interrupted one or more times by O or S, C_7 - C_{12} aralkyl or a group of the formula



in which R_5 is C_1 - C_{18} alkyl,

R_{23} and R_{24} independently of one another are a group of formula

-X₁-X₂-X₃, wherein

X₁ is -O-, -S-, -NH-, -CONH-, -COO-, -SO₂-NH-, or -SO₂-O-.

X₂ is an alkylene, arylene, aralkylene or cycloalkylene spacer containing optionally one or more groups -O-, -S-, -NR₁₄-, -CO-, -CONH-, -CONR₁₅-, or -COO- as linking bridge,

X₃ is -OH, -NH₂, -C(R₁₁)=CH₂, -OC(O)-C(R₁₂)=CH₂, -C(O)-C(R₁₂)=CH₂, or -OC(O)-N-X₄-N-C(O)-O-X₅-O-C(O)-C(R₁₂)=CH₂; wherein

R₁₁ is hydrogen, or methyl,

R₁₂ is hydrogen, or methyl,

R₁₄ and R₁₅ are independently of each other hydrogen, C₁-C₈alkyl, or C₆-C₁₂aryl, C₁-C₄alkyl, or C₆-C₁₂aryl, and

X₄ and X₅ are independently of each other an an alkylene, arylene, aralkylene or cycloalkylene spacer.

8. A diketopyrrolopyrrole according to claim 7, wherein R₂₃ and R₂₄ independently of one another are a group of formula

-X₁-X₂-X₃, wherein

X₁ is -S-, -SO₂NH- or -NH-,

X₂ is a C₁-C₁₈alkylene group, and

X₃ is -OH, -NH₂, -CH=CH₂, -C(CH₃)=CH₂, -CO-CH=CH₂, -CO-C(CH₃)=CH₂, -CO-CH=CH₂, or -CO-C(CH₃)=CH₂.

9. A diketopyrrolopyrrole according to claim 7 or 8, wherein R₂₁ and R₂₂ independently of one another are hydrogen, or C₁-C₁₈alkyl.

10. A polymer, obtainable by polyreacting a mixture consisting of
 (A) from 0.5 to 20, preferably from 1 to 10 % by weight, based on the sum of the components (A) and (B), of a diketopyrrolopyrrole IV or V, and
 (B) from 99.5 to 80, preferably from 99 to 90 % by weight, based on the sum of the components (A) and (B), of a monomer which is copolymerisable with the diketopyrrolopyrroles IV and V,
 the sums of (A) and (B) making up 100 % by weight.